

Investment Mode 1: Fundamental Nanoscale Science and Engineering Research—Knowledge Generation

Interdisciplinary fundamental research offers a productive fusion of traditional ideas that frequently leads to unanticipated results and significant breakthroughs. By exploiting the opportunities afforded by the nanoscale instrumentation for analysis and manipulation of matter, interdisciplinary fundamental research will foster the development of unifying principles, phenomena, and tools.

Specific areas of focus that draw on multiple disciplines include:

- Novel phenomena, material structures, processes, and properties
- Nano-biosystems
- Nanoscale devices and system architecture
- Theory, modeling, and simulation

Agency Participation

(lead in bold)

DOD	National security
DOE	Energy, national security, and the environment
IA	National security
NASA	Aeronautics and space exploration
NIH	Biological phenomena
NIST	Basic nanoscale measurement science
NSF	Traditional discipline-based research as well as multidisciplinary research in biological sciences; computer and information science and engineering; education and human resources; engineering; mathematical and physical sciences; and, social, behavioral, and economic sciences
USDA	Biological and agricultural production systems